FAA AVIATION NEWS

NOVEMBER 1973

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COVER:
What's so special about an aircraft with a propeller on its tail and wings that flap? See page 8.

FAA AVIATION NEWS

DEPARTMENT OF TRANSPORTATION/FEDERAL AVIATION ADMINISTRATION VOL. 12, NO. 7

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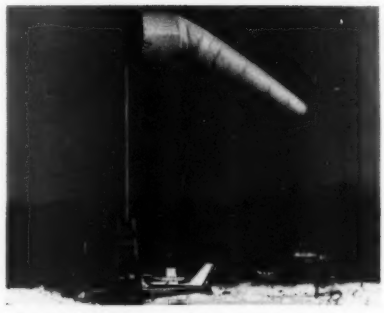

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FAA AVIATION NEWS is published by the Office of Information Services, Federal Aviation Administration, Washington, D. C. 20591, in the interest of aviation safety and to acquaint readers with the policies and programs of the agency. The use of funds for printing FAA AVIATION NEWS was approved by the Director of the Office of Management and Budget, August 9, 1971. Single copies of FAA AVIATION NEWS may be purchased from the Superintendent of Documents for 35 cents each. All printed materials contained herein are advisory or informational in nature and should not be construed as having any regulatory effect. The FAA does not officially endorse any goods, services, materials, or products of manufacturers.

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A New Era Begins
N17200
N1773W
As of Nov. 1, 1973, all certificates and ratings in general aviation will have higher, safer standards. Here is a review of revised Part 61.

On November 1 new airmen certification rules that will eventually concern nearly all pilot applicants went into effect. The revisions represent the first basic changes in FARs governing airmen certification since the modern standards were introduced in 1938.

The new rules answer a need that has been expressed by both government and industry—to match the complexity of today's aircraft and operating environment with a broader range of pilot preparation, and to insure currency of flight experience. Requirements for most pilot certificates have been upgraded, and a new requirement has been added for a biennial flight review. In addition, the instructor is given more responsibility for student training and practice, and in turn higher standards have been set for instructors. (Airline transport pilot certification rules were not affected because they already operate under sufficiently stringent rules.)

Because the revised Part 61 represents a new "total operational training concept" in place of specific requirements, a number of questions are being asked about the rule changes, particularly about the nature of the biennial flight review, such as the following:

WHICH PILOTS ARE AFFECTED BY THE FLIGHT REVIEW REQUIREMENT, AND WHEN? All pilots are subject to this requirement which specifies that after November 1, 1974 "no person may serve as pilot-in-command of an aircraft unless he has successfully completed a biennial flight review within the preceding 24 months." (Certain other named flight checks will serve to meet the requirements, such as a check-ride for a pilot certificate or rating, required proficiency checks for airline pilot, etc., within the prescribed two years.)

WHO GIVES THE FLIGHT REVIEW? The flight review is conducted by a Certified Flight Instructor or other person designated by the FAA, and selected by the pilot. The flight review is an industry-managed/FAA monitored currency requirement.

WHAT DOES THE FLIGHT REVIEW CONSIST OF AND HOW LONG DOES IT LAST? No minimum time has been specified for the flight review nor are there specific requirements for the procedures or maneuvers to be reviewed. This is left to the person in charge. He (or she) will review with the pilot the current general operating and flight rules of Part 91 and those maneuvers and procedures that are necessary for the pilot to demonstrate that he can safely exercise the privileges of his certificate.

WHO PAYS FOR THE FLIGHT REVIEW? Financial arrangements are between pilot and instructor, as for any other professional service.

DOES THE PILOT GET A CERTIFICATE OR PROOF THAT HE HAS TAKEN THE FLIGHT REVIEW? The instructor endorses the logbook of the pilot with the date and the fact that he has satisfactorily accomplished the flight review.

CAN A PILOT FAIL THE FLIGHT REVIEW? If a pilot does not satisfactorily accomplish the flight review the instructor will not endorse his logbook. If the 24 month period has expired, the pilot may not act as pilot-in-command until he satisfactorily accomplishes a flight review and has his logbook appropriately endorsed. The flight review provides the opportunity for a pilot to have a flight instructor comment on his performance.

IS THE PILOT GROUNDED IF HE DOES NOT SATISFACTORILY COMPLETE THE FLIGHT REVIEW? No, he can continue to fly *provided* it has not been 24 months since his last satisfactory flight review—a good argument for not letting the review go until the last minute.

WHAT HAPPENS TO YOUR CERTIFICATE IF YOU DO NOT COMPLETE THE FLIGHT REVIEW? Nothing. You retain it, but it is not valid for any type of flying as a pilot-in-command until you have passed the required review, if the 24 month period has expired.

DOES THE FLIGHT REVIEW SUBSTITUTE FOR OTHER CURRENCY REQUIREMENTS? No, but the other currency requirements have been modified in some respects. For example, a pilot must now log only three takeoffs and landings in the preceding 90 days, to be eligible to carry passengers—down from five such operations under the old rules. These no longer need be full stop landings, except in tailwheel airplanes (considered more difficult to handle on the ground). Furthermore, these takeoffs and landings do not have to be made in category, class and type, but only in category and class. This means that a pilot with an airplane single-engine land certificate may now become current (for purposes of passenger carrying) with three touch-and-go takeoffs in any single-engine nosewheel airplane; he may then fly with passengers any single-engine nosewheel airplane with one exception noted below. (He also must have his flight review, of course.) Three night takeoffs and landings will make a certificated pilot current at night.

DOES THIS MEAN YOU COULD TRANSITION FROM A TRAINER LIKE A CESSNA 150 TO A PLANE LIKE A BONANZA WITH ONLY THREE TAKEOFFS AND LANDINGS? No. The rules have been changed significantly in respect to transitioning to a "high-performance" aircraft—one that has more than 200 hp, or that has retractable gear, and a controllable pitch prop and flaps, regardless of horsepower. A pilot who has not logged pilot-in-command time in this type of airplane before November 1, 1973, must receive instruction from a flight instructor and have his logbook endorsed that he is competent to pilot high performance aircraft before he may act as pilot in command in such aircraft.

HOW ABOUT INSTRUMENT CURRENCY? A pilot must log six hours of instrument time (actual or simulated) within the preceding six months. Three hours can be in simulators, and at least three hours must be in the category of the aircraft involved (airplane, rotorcraft, etc.). The six hours must include at least six instrument approaches. Pilots logging IFR time must record the locations and the types of approaches completed during the flight—and the name of the safety pilot if it is simulated IFR.

In lieu of the six hours of IFR flight, a pilot can obtain official currency by passing an instrument competency check given by an FAA inspector or other designated person. An instrument pilot whose lack of currency extends beyond one year *must* pass an instrument competency check to regain IFR currency.

Under revised Part 61 rules the instructor exercises more supervision over student training and practice. Before he recommends flight test, the instructor must have prepared the applicant thoroughly and reviewed all areas where weakness was shown on written tests.

WHEN DO THE REVISED RULES GO INTO EFFECT FOR AN APPLICANT FOR A PILOT CERTIFICATE OR RATING? The rules became effective on November 1, 1973, but for one year after that date (until November 1, 1974) a person has a choice of meeting the requirements of either the present Part 61 or Part 61 (Revised). This means that if you are presently working toward a rating or certificate you will not have to change horses in mid stream, so to speak. *However,* if you do *not* get your certificate before November 1, 1974, you will then *have* to meet the new requirements.

HOW DO THE NEW REQUIREMENTS FOR PRIVATE PILOT CERTIFICATION DIFFER FROM THE OLD RULES? Standards for pilots have been up-graded pretty much across the board. For a private certificate, although the minimum hours remain the same, the new requirements have been spelled out to a far greater degree. For instance, private pilot applicants will need 20 hours of flight instruction from an authorized flight instructor including three hours of cross-country and three hours of night flight with ten takeoffs and landings (otherwise the certificate will be good for daylight only). The applicant will need 20 hours of solo flight, including 10 cross-country hours, and three solo takeoffs and landings at an airport with an operating control tower.

The instructor will assume a key position in pilot training under the revised rules, as he is given added responsibility for seeing that the student properly learns not only prescribed maneuvers but also how to react to emergencies, collision avoidance precautions, radio control, etc. (The instructor's qualifications are upgraded accordingly). Under the new certification rule, when the instructor has given the student at least the required three hours of final instruction preparatory for the private pilot flight test and has recommended him for his check ride he should be fully confident that his student is ready for the privileges of private pilot.

The instructor is also required to review with the applicant any areas in the written exam in which the student scores poorly. The FAA inspector or designated examiner then selects at least one maneuver from each area specified for demonstration, or as many as he feels necessary to evaluate the applicant's ability.

WHAT ABOUT GROUND SCHOOL? The new rules require an applicant for a pilot or instructor written test to show that he has satisfactorily completed required ground instruction or an appropriate home study course. This proof may be in the form of a diploma, logbook entry or certificate from a school or ground instructor. Provision has been made for persons who develop their own home study program, FAA Advisory Circular 61-65 gives complete details on this subject.

HOW DO THE NEW RULES AFFECT THE STUDENT PILOT? No longer can the student get a logbook endorsement for unlimited solo operation from his instructor. Effective November 1, 1973, all student pilots—regardless of flight time—must have a separate endorsement from an instructor for each solo cross-country flight, and an endorsement each 90 days for local solo flights. Thus the instructor is expected to assume considerably more supervision of student activities. Incidentally, the new rules prohibit a student pilot from serving as a pilot crew-member on any aircraft for which more than one pilot is required.

ARE THE NEW COMMERCIAL REQUIREMENTS MORE STRINGENT ALSO? Affirmative. For an unrestricted commercial certificate an applicant will have to hold a private certificate and an instrument rating and have logged 250 hours of flight time (up from 200 hours), of which 50 may be in simulators. He must have logged 50 hours of flight instruction (formerly 20) including ten in a "high performance" airplane, and ten hours of instruction preparatory for the flight test. He must have logged 50 hours of cross-country time and five hours of night flying (ten takeoffs and landings).

Applicants who do not have an instrument rating but meet other requirements may get a commercial certificate, but they will be prohibited from carrying passengers for hire in airplanes on cross-country flights of more than 50 nautical miles or at night. (But even for this restricted commercial certificate the applicant must have at least ten hours of instrument training.)

SINCE THE FLIGHT INSTRUCTOR ASSUMES MORE RESPONSIBILITY MUST HE ALSO MEET STRICTER QUALIFICATIONS? Yes, under the revised rules an applicant for a Flight Instructor Certificate must have a commercial (or ATR) certificate. If he plans to instruct in airplanes and/or instruments he must also have an instrument rating, since all airplane ratings now require instrument training in some degree or other. The instructor must also hold ratings from the following list for whatever areas he plans to instruct: Airplane—single-engine (land, sea); Airplane—multi-engine (land, sea); Rotorcraft—helicopter; Rotorcraft—gyroplane; Glider; Instrument—airplane; Instrument—helicopter.

Written exams for instructors consist of two types of tests: fundamentals of instruction (common to all instructor ratings and required to be passed only once); plus tests for individual ratings. However separate written tests will *not* be given for single and multiengine class ratings.

Provisions for renewal of flight instructor certificates are basically the same as under the old rules. The certificate can be renewed for two years if an approved refresher course has been completed, if the instruction record proves competency, or if the practical test is passed. An instructor whose certificate does not bear the necessary rating has until November 1, 1975, to convert it. (This should be done at the date of first certificate renewal after November 1, 1973).

ARE THE INSTRUMENT RATING REQUIREMENTS CHANGED? Yes, most important change calls for instruction in VOR, ADF and ILS approaches. Except for VOR approaches this instruction may be in ground trainers. The applicant must be prepared to demonstrate all three types of approaches during the practical test. Requirements include 200 hours of flight time (50 cross-country) 40 hours of simulated or actual instrument time including an instrument cross-country flight at least 250 nautical miles, on federal airways or as routed by ATC. This trip must include flight instruction in VOR, ADF and ILS approaches at different airports, and the trip must be in actual flight rather than in a ground trainer.

Under the new rules it becomes more important than ever before that pilots keep accurate logs to show that the various requirements of Part 61 (revised) have been met. These records must be presented for review upon reasonable request of FAA.

FAA Advisory Circular 61-65, "Part 61 (Revised) Certification: Pilot and Flight Instructors" is available free from DOT/FAA Distribution Unit, TAD 484.3, Washington, D.C. 20591. ■

New commercial requirements increase the total flight time from 200 to 250 hours but 50 may be in simulators. New applicants for an unrestricted commercial certificate must hold an instrument rating, but this does not affect holders of existing commercial certificates.

DATES TO REMEMBER

November 1, 1973	General effective date for Part 61 (Revised). All provisions not bearing other effective dates go into effect at this time.
November 1, 1973	New rules governing student pilots go into effect.
November 1, 1973 to November 1, 1974	Between these dates applicants for certificates or ratings may meet either requirements for present Part 61 or Part 61 (Revised).
November 1, 1974	Biennial flight review must have been completed by all persons before they may act as pilot-in-command.
November 1, 1974	After this date applicants for new certificate or rating must meet the requirements of Part 61 (Revised).
November 1, 1975	Flight instructors must have old ratings exchanged for new certificates and ratings before this date.

COLD WEATHER and your ELECTRICAL SYSTEM

If you want to do a little local flying, strictly VFR over familiar terrain, a sluggish battery is no serious deterrent. You get someone to prop the engine, fire it up and away you go. Chances are, operating the engine will charge the battery up, and even if it does not, you are not planning on using the radios; just a little fun flying and no harm done. Right?

Wrong.

In the first place batteries seldom die abruptly of old age alone. A short in the system, a bad generator or alternator, etc., may have contributed to its demise, in which case running the engine will not necessarily bring the battery back to life. In the second place, if all the cells are down and you have an alternator, as most modern aircraft do, rather than a generator, only a booster charge can revive the battery. And, perhaps most important of all, if you are in the habit of flying a modern airplane the chances are that you are also in the habit of depending on auxiliary electric power whether you realize it or not. Consider the following example:

An off-duty airline pilot with an hour to spare and a recently acquired Piper *Comanche*, supposedly raring to go, found the prop kicking over weakly in response to the starter button. It was a bitingly cold day and the airplane was tied down outside, so he assumed that the engine was a little stiff with congealed lubrication. He got a lineman to prop the plane, it roared into life, and he took off cheerfully expecting the battery to be charged up after an hour of flight.

The first reminder that auxiliary electric power could not be dispensed with on a sophisticated aircraft came after he automatically hit the gear-raising switch following take-off. He was greeted by only the smallest "clunk" instead of the usual grinding noise that signals the gear coming up.

"Whoops, gear won't go up. Oh well, better have it stuck down than up."

It was later that he discovered that while the electric gear motor will *not* retract the gear when the battery is dead, activating the gear handle *will* release the gear downlocks—perhaps allow the gear to collapse on landing. Which it did, half an hour later, when he greased it in for what should have been a normal landing, and turned out to be a badly scraped belly and a ruined prop. (No battery meant no warning red lights.)

He was lucky. A dead battery means a loss of not only the gear operating system and radios, but also all lights, inside and outside the cockpit, stall-warning horn, pitot tube heater, engine gauges and auxiliary fuel pump, to name a few of the commonly used devices that depend on electrical power.

The fact is that auxiliary electrical power is an essential safety element in modern aircraft, and no one should attempt to fly with a weak or dead battery. Batteries have to be watched especially carefully in the wintertime because cold weather not only makes engines harder to start, it also severely reduces the wattage available from the battery, as indicated in Figure 1. Batteries operate best when the temperature is around 80 degrees or higher. At the freezing point, only about 60 percent of a good battery's optimum power will be available, and at zero degrees only about 45 percent. Something to think about, if you are flying from a sea level, temperate climate, such as that of Los Angeles, for example, up to a ski resort at Mammoth Lake in the Sierras. A test of your battery's strength during preflight check would be well worth the effort, in terms of peace of mind, should you run into poor weather on your return, or have to make a startup in subzero temperature. As Figure 1 indicates, your engine could require two or three times the power normally needed to turn it over, on a really frosty morning, especially if, as is usually the case at mountain resorts, you are unable to hangar it overnight.

A run down battery is a potential trouble source in the winter in more ways than one. The freezing point of the electrolyte depends on its specific gravity, and the weaker the battery is, the lower that specific gravity will be. As shown in Figure 2, a fully charged cell is virtually "freeze-proof", but a badly run down battery can freeze as soon as the temperature drops below 20 degrees above zero.

In some instances, pilots have run batteries down so low by trying unsuccessfully to crank the engine to life in subfreezing conditions that when they re-

turned to the aircraft a few hours later to try again they found the battery frozen solid (some bush pilots in Alaska make a practice of taking their airplane battery indoors with them at night, in bitter cold weather, to make sure they get enough power out of it in the morning). Incidentally, if you ever do suffer a battery freezeup, get the battery out of the aircraft right away. Otherwise, when it thaws the electrolyte will leak through the cracked shell and possibly cause serious damage to any metallic equipment it contacts.

Since you may need all the power you can get in wintertime, this is a good season to make sure that the cable clamps and terminal posts are free of dirt, acid film or other accumulations which could reduce its output. Clean the posts with a wire brush, and the clamps with a soda solution and the brush. After you have replaced the clamps, a coating of petroleum jelly will retard corrosion at the terminals.

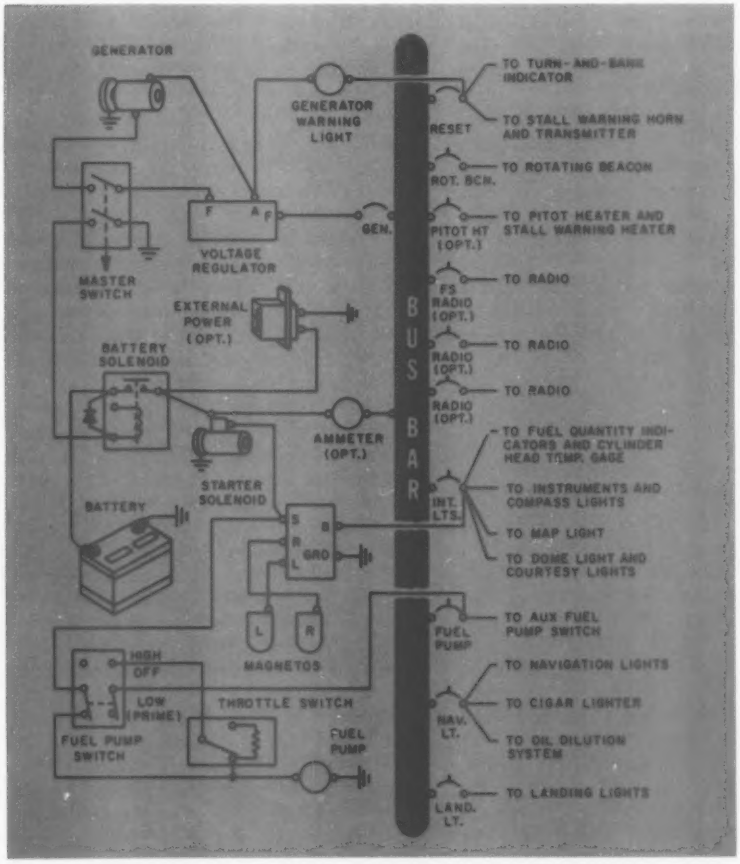
This is also a good season to get into the habit of making sure that all radios and other electronic equipment are turned off before starting the engine. This not only minimizes the drain on your battery; it also protects your avionics equipment against possible damage. Today's aircraft avionics are more efficient than their predecessors, in that they weigh less, use less power and perform a greater variety of services; however on the other side of the coin, they are often more susceptible to *low*, as well as high, voltage peaks and extreme temperature variations. The last place you want to lose your radios is when you are flying out of remote and snowy mountain country, and you could bring about this misfortune by cranking the engine with the radio switch left on.

With the increased range of modern light aircraft, the possibility is greater than ever that your engine will be exposed to significant temperature variations. You may live well below the Mason-Dixon line, but if there is any likelihood that you will be making a flight to the high mountains or to the north country during the winter, a seasonal oil change in accordance with manufacturers recommendations is a good idea. The kind of oil in your crankcase makes a lot of difference to the load on your battery in cold weather starts. You can, as some Arctic flyers do, drain the oil on your arrival, keep it under your bed, and pour it back in before you leave, but not everyone is that wild about oil fumes in his dreams or on his best skiing togs.

Being kind to your battery in wintertime includes making certain that your ignition system is in tiptop shape, so that you minimize cranking the engine during start-up. Re-familiarizing yourself with your airplane maker's instructions for cold weather starts will also help; there is no standardized procedure that will apply to all types of general aviation aircraft. The one maxim that applies to all is this: Do not take off with a battery that does not appear to be in the best of health. It could die en route. ■

(Editor's note: The freezing applies specifically to lead-acid batteries. Nicad batteries, which have many different characteristics, will be the subject of a followup article.)

TODAY
IS YESTERDAY'S REWARD FOR SAFETY



Chilly weather weakens your battery while sharpening your airplane engine's appetite for amperage. Diagram shows power demand on single-engine airplane.

Fig. 1

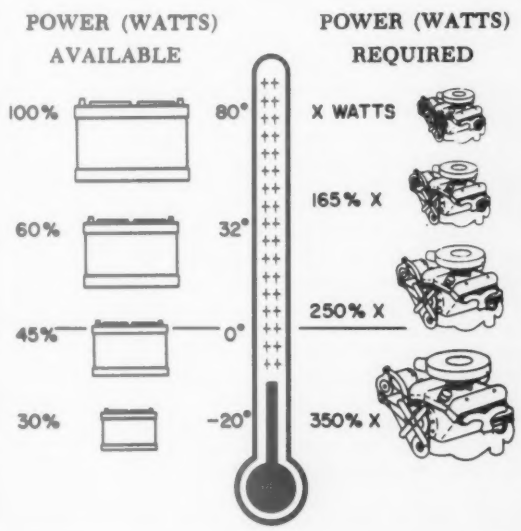


Fig. 2

Specific Gravity / Freezing Point

	F		F
1.100	18°	1.220	-31°
1.120	13°	1.240	-50°
1.140	8°	1.260	-75°
1.160	1°	1.280	-92°
1.180	-6°	1.300	-95°
1.200	-17°	(fully charged)	

Whirling

Airmen used to prop-driven airplanes—where it is safest to walk around the back of the craft—must retrain themselves to pass in front of a helicopter to avoid deadly tail rotor.

In the 15th century Leonardo Da Vinci theorized that "aerial propulsion" could be obtained by means of a vertical air-screw that would churn through the air and lift man into the sky. In 1483 he made a sketch of such a manpowered air-screw, vertically mounted, and in so doing invented the helicopter. It was nearly 500 years before the machine itself was perfected and brought into general use.

Recent wartime usage of the helicopter has brought out all of its unique advantages, and presently civilian application of rotory aircraft is expanding tremendously. There are today almost 3,000 helicopters in use in the United States.

Short range transportation, of course, constitutes an important usage for helicopters because they are able to land in restricted places, even utilizing helipads on city rooftops, and they can fly at speeds of up to 200 mph. They are being used increasingly in commerce for aerial application in such operations as crop dusting, spraying, and seeding. But perhaps the most incisive and valuable work being done by the modern helicopter is in emergency situations—as ambulances, transporting accident victims quickly to medical facilities; as rescue vehicles, lifting survivors from sinking ships or desolated flood areas; and as highly versatile fire fighting units which can discharge fire extinguishing liquids from the sky.

However, the very quality which makes the helicopter so valuable—its high maneuverability—also constitutes a particular kind of safety hazard for this type of aircraft. The accident rate for helicopters is quite high, almost three times that of fixed wing aircraft on a per capita basis.

The NTSB figures for 1969 (the latest year for which a full statistical analysis is available) show that 10.7 percent of the rotorcraft in the general aviation fleet were involved in an accident, as compared with 3.0 percent of multi-engine fixed-wing general aviation airplanes, and 3.6 percent of the single-engine general aviation airplanes.

Two things should be noted in fairness about these figures. First, NTSB figures for rotorcraft combine both helicopters and gyrocopters, and these two types of aircraft operate on a different principle. Helicopters employ a motor driven rotor blade, while gyrocopters employ an autorotated or non-motorized blade. Nevertheless, gyrocopters represent only a small fraction of all rotorcraft flying.

Is the helicopter a more difficult or accident prone aircraft to fly than a fixed wing aircraft? The question is not easily answerable, but it is apparent that a chopper pilot has more opportunities to get into situations where failure either of a mechanical nature or of piloting skill is likely to lead to serious consequences. Many operations are conducted so close to the ground or to ground based obstacles that a slight unintentional loss of altitude or miscalculation can bring about contact with trees, poles, wires, hillsides, buildings, etc. The marvelous maneuverability of the helicopter sometimes lulls pilots into a false sense of infallibility. But these craft are even more vulnerable than fixed wing aircraft to power failure, and the experienced chopper pilot must always keep his mind alert to this possibility and to the means of avoiding a deadly crash.

All helicopter pilots learn autorotation, the technique of slowing and controlling the descent by windmilling of the rotor blades. Safe emergency landings are possible if at the point of failure the pilot has sufficient altitude or airspeed—to a degree, one can be traded off for the other. Each helicopter has its autorotation performance limitations with respect to these two factors plotted, and the data is memorized by all careful pilots. It is sometimes known as the "dead man's curve," and with good reason, because it can spell the difference between survival and destruction.

Shallow Approaches

A helicopter is capable of landing or taking off more or less vertically, but many pilots prefer an angular approach or departure in order to have some forward speed to trade off for lack of altitude when close to the ground. The procedure is sound, as long as the pilot bears in mind the physical confines of the space in which he is operating. The following accident account, taken from the files of the National Transportation Safety Board, is all too typical:

A 26-year old pilot with a commercial helicopter certificate was hired to ferry two engineers to a construction site near Fairbanks, Alaska, where they were working on a pipeline. The pilot picked up the two engineers at Fairbanks' Metro Airport and flew them north to a point along the main highway where they landed to pick up a water pump, some hose and other equipment. The terrain was flat and open, and the aircraft lifted off easily, but the pilot, climbing out at a shallow angle, failed to see or avoid the high tension wires strung along the road. A few seconds after the rotor blades struck and became enmeshed in the wire, the aircraft crashed and burst into flames, killing all three persons on board.

The second major area of accident related causes is in maintenance. In comparison with the fixed-wing airplane, the modern helicoper contains many critical moving parts which operate under high stress, and the vibrations caused by the rotating parts make rotorcraft considerably more unforgiving of improperly secured parts. The need to operate the power plant at high output during hovering, or when carrying heavy loads, tends to reduce the life of chopper engines.

Added to this is the high-use rate of helicopters, nearly double that of some fixed-wing airplanes. NTSB figures for 1969 showed that active rotorcraft in general aviation averaged 304 hours of flying time during the year, while multi-engine fixed wing airplanes averaged 270 hours. Single engine fixed-wing airplanes averaged only 180 hours of flight annually.

While general aviation rotorcraft are governed by the same general rules that apply to other aircraft, each helicopter has its own manual which spells out additional procedures for inspecting parts, and in some cases for replacing parts after a given lifespan regardless of condition. Periodic checks for signs of metal fatigue are a very important part of helicopter maintenance, and any carelessness in this department can have fatal results, as noted in the following incident, which occurred in Brancherville, N.J., in 1971:

g Wings

The maneuverability of the helicopter (left) and gyroplane (above) makes them extremely useful, but also places them in an environment where constant vigilance is essential.

A 35-year old pilot with a commercial certificate, 1200 hours in type, took off in his chopper in the early morning for an aerial spray application. He was taking part in a Gypsy Moth control program, requiring treating an area on a lake shore with a non-toxic chemical.

As he was making his third pass over the area the helicopter began to vibrate violently and lose altitude. At 900 feet a main rotor blade flew off, the copter flipped over, still shaking fearfully, and fell into a clump of tall oak trees. The fuel tank ruptured on impact, and fire broke out immediately, causing the death of the pilot. The subsequent NTSB metallurgical investigation said that the failure of the blade grip resulted from a pre-existing fatigue crack. The probable cause of accident was listed as "inadequate maintenance and inspection." The copter had not been serviced properly, and it literally flew apart in the sky.

Rotorcraft, like all aircraft, are subject to stalls when the angle of attack becomes excessive. In a helicopter the angle of attack is the positive angle formed between the airfoil (the rotor blade) and the relative airflow. As with fixed wing aircraft, increasing the angle of attack increases lift, up to a critical point, whereupon separation of turbulent air destroys lift and produces a stall.

Helicopters are also subject to "blade stall" which most commonly occurs as a result of *excessive airspeed*, under conditions where the angle of attack is not directly controlled by the pilot. When the helicopter is in forward flight, as each blade moves around the disk it reaches a point where it is facing away from the direction of the airstream. This "point of minimum lift" is compensated for by the flapping action of the hinged blade, which automatically increases the angle of attack at this point. The faster the forward speed, the greater the angle of attack formed by the "retreating" blades, and if the critical angle is exceeded, an intermittent stall condition will prevail. The 'copter will shudder violently and may roll over.

Folding Blades

Conversely, rotorcraft are subject to loss of all lift when the rpm rate is allowed to fall *too low* during flight. The rigidity and positioning of the blades around the disk are determined in large part by the centrifugal force generated by rotation, and if this force is allowed to diminish beyond a critical point (normally red-lined on the rpm instrument face), air pressure on the hinged blades will force them to rise and eventually fold up in a vertical position something like a diving hawk. This form of rotor decay only occurs as a consequence of obvious pilot mismanagement of the controls.

Gyrocopters (or autogiros or gyroplanes) are essentially propeller-driven airplanes with free-wheeling rotorblades supplying the lift, in place of wings. (Some versions also use a power takeoff from the engine to drive the rotor blades at specific phases of flight.) One important distinction in the rotor systems is that with a helicopter the airflow passes into the rotor disc from *above* (and ahead) of the aircraft, whereas in gyrocraft the airflow must come from *below*, and ahead, of the disc in order to rotate the blades.

This means that if the gyroplane pilot allows the plane to pitch down beyond a critical angle (the rotor mast is slanted aft to help prevent this occurrence) he can lose all rotor lift, regardless of his airspeed. This type of control mismanagement produces accidents of the following nature:

In July of 1971 a student pilot took off in a homebuilt gyrocopter, equipped with a VW engine, from Anoka, Minn. As he was circling over the airport his craft was seen to begin porpoising rapidly. Apparently the pilot attempted to overcome the oscillations by counterpressure on the control stick, and failed to handle the throttle properly. The gyrocopter nosed down abruptly, resulting in such severe vibrations of the rotor that one of the blades flew off, cutting through the rudder. A steep dive preceded a fatal impact with the ground.

Rotorcraft accidents tend to be of a serious nature, not only in flight but also on the ground. In fact, some observers will tell you that there is no such thing as a minor ground accident with a helicopter —no fender-benders, or paint-scrapers. If one of those whirling blades strikes something the damage is going to be substantial, and if a human being is involved, the consequences may be tragic. The possibility of one of the blades becoming detached and hurled aside with terrific force is something no helicopter pilot, or passenger, for that matter, should ever disregard. A helicopter on the ground with its engine running should be approached or departed with an alert and cautious attitude.

The tail rotor is an insidious hazard. Most persons who spend a lot of time around propeller aircraft are used to thinking of the tail section as the safe area; the accounts of persons who have unwittingly walked right into the tail rotor arc are ghastly. Some tail rotors have a guard rail, but many do not.

The arc of the main rotor blades is, of course, also a deadly area. Most people instinctively duck their heads when walking under the arc, but there have been some gristly instances where people have reached up to try to retrieve a hat blown away, and lost part of an arm. Placarding a helicopter with safety boarding and disembarking instructions is strongly recommended. ■

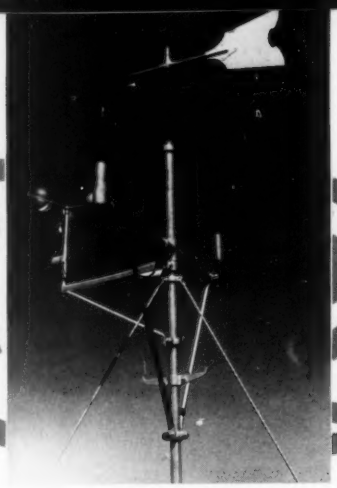
Boarding

1. Stay well away from the tail section.
2. Crouch low before getting under the main rotor.
3. Hold firmly to hats or loose articles. If anything is blown free, do not pursue it until you are clear of the blades.
4. If blinded by blowing sand or other debris, sit down and await help. Never attempt to grope your way on board.

Disembarking

1. Follow same procedures as in Boarding.
2. If on a hillside, always depart downhill. If this requires walking around the helicopter, pass around in front, never in back.

Weather Whys:



This is the eighth in a series of articles on aviation weather prepared by the meteorologists of National Weather Service.

WIND

The sky is not a uniform mass of air, but a sea of swirling currents, constantly changing

Wind is simply air in motion, but this invisible weather element affects all flights from start to finish.

The direction and speed of the wind are determined by a combination of many factors. Atmospheric pressure is one of the most significant. Pressure, largely generated by heat from the sun, is distributed unevenly over the earth's surface. Just as water flows downhill, air moves from centers of high pressure toward areas of low pressure. *The greater the difference in pressure between two neighboring air masses, the stronger the wind will be.*

Gravity, surface friction, centrifugal force, and the earth's rotation also exert their influence on wind direction and speed. When all of these are added to the complex factors that control the general circulation of how the wind blows becomes anything but simple.

For the operating pilot, who has no need to know all the meteorological why's and wherefore's, a few rules of thumb borrowed from the weatherman's wind book can be helpful:

Rule 1. Wind blows from high to low pressure.

Rule 2. The greater the difference between high and low pressure centers, the stronger the wind.

Rule 3. In general, the prevailing winds that move storm systems across North America blow from west to east.

Rule 4. Winds blow clockwise around a high pressure system and counterclockwise around a low.

These four rules explain quite a few wind phenomena and may assist the pilot when he has to evaluate a weather situation independently and make a flight decision on his own.

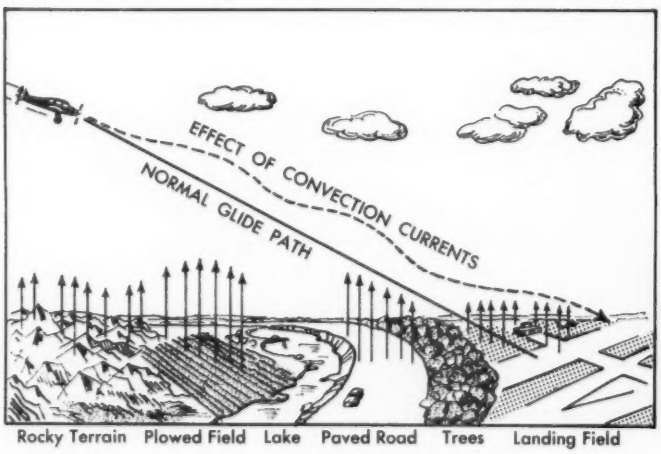
The most favorable flight altitude often depends on upper winds. Information on these winds at various flight levels is contained in aviation weather reports and forecasts.

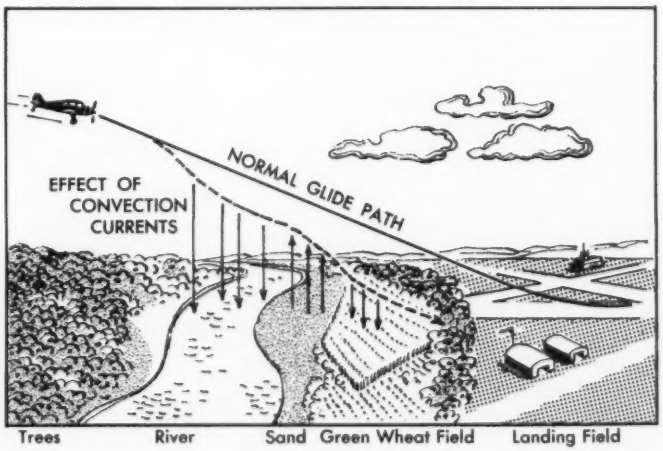
Wind speed and direction above the earth's surface are measured by tracking balloons visually or electronically. Small pilot balloons, inflated with a fixed amount of helium, are tracked visually with an instrument called a theodolite, which is similar to a surveyor's transit. Since the normal ascension rate of the balloon is known, the charted path of the balloon can be used to determine the direction and speed of the wind at various levels. Wind measurements cannot be obtained by the visual method when the balloon is above the clouds.

But modern technology has provided a more efficient technique for measuring upper winds in all weather. Automatic radio-direction-finding equipment can track balloon-borne instruments to high levels and great distances.

All pilots are familiar with the variation in wind speed and direction at different altitudes. These variations are the rule rather than the exception. Occasionally, wind directions may be exactly opposed and speeds may differ considerably over a short distance. In active thunderstorms and extreme frontal situations, wind speeds may differ by 50 knots or more within a few hundred feet horizontally or vertically. In air free of clouds, this variation in

Variable terrain, altering the force of convection currents, can cause the glide path to be well above or below that expected by the pilot.





Balloon is filled with gas to lift instruments into upper air to measure temperature, barometric pressure, humidity. Wind direction and speed are computed by tracking radio signals.

speed may occur within a few thousand feet vertically and a few score miles horizontally.

Between streams of air blowing in different directions or at different speeds, a phenomenon called *wind shear* develops. Wind shear causes turbulence, which is strongest where the shears are greatest. This type of turbulence often occurs where there are no clouds and therefore is called clear air turbulence (CAT). CAT is one of the serious problems encountered in the operation of high performance aircraft.

Closer to the earth, wind flow is influenced greatly by convection and terrain or man-made obstacles. *Convection currents* are small, local, vertical circulations, caused by variations in heat given off by different kinds of surfaces. Plowed ground, sand, rocks and barren land give off a great deal of heat. Water and vegetation do not. *The vertical currents created by these differences can seriously affect small aircraft approaching a landing field.* On hot summer afternoons, strong convective currents may extend upward through 10,000 feet or more.

Terrain or obstacles produce eddies in the air that also have considerable effect on the flying characteristics of a plane landing or taking off. These eddies usually are confined to the few thousand feet nearest the surface.

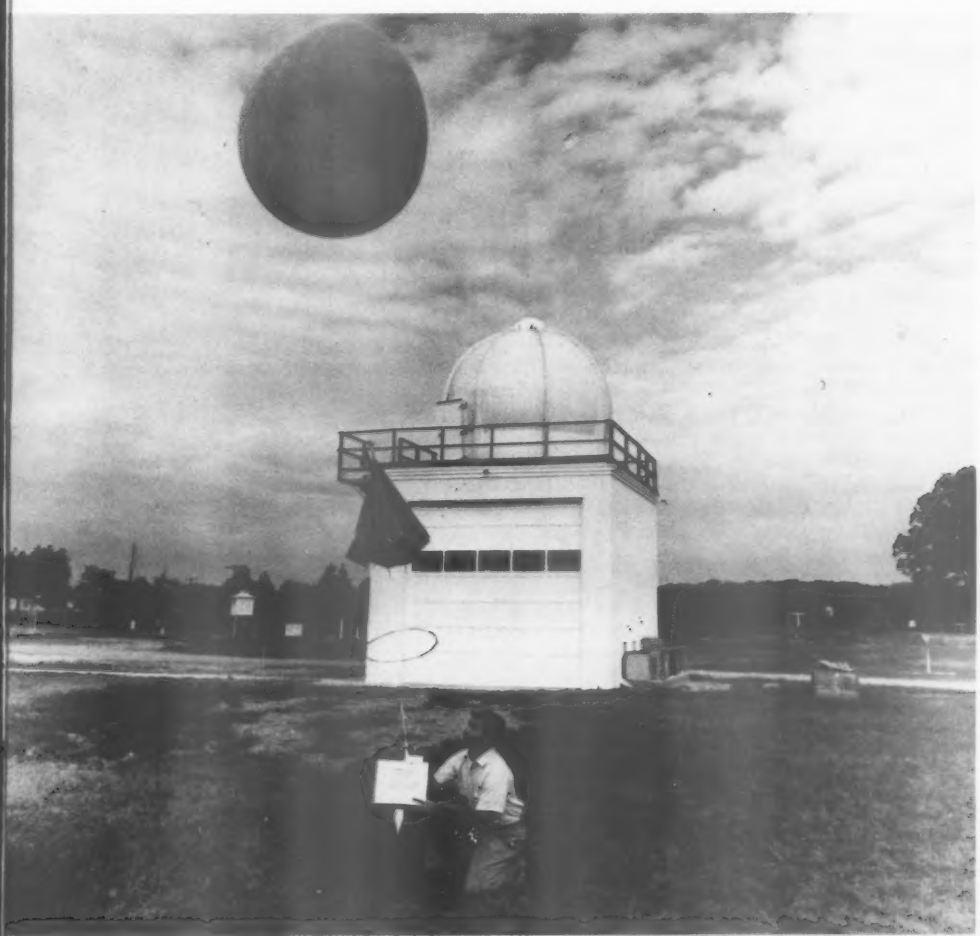
Vertical currents and eddies both act to disturb the smooth flow of wind and cause gustiness and turbulence. Stronger winds and rougher terrain produce heavier turbulence through a deeper layer of air.

Surface winds determine the direction of takeoff and landing. The force of surface wind is measured by an anemometer, and the direction is indicated by a vane that points into the wind.

Each year, small planes are damaged, and their pilots and passengers injured or killed, while landing when surface winds are erratic, shifting and gusty. Most of these accidents occur because the pilot does not have full knowledge of surface wind conditions and is unprepared to take corrective action.

Many small aircraft operate from uncontrolled airports, without tower or weather facilities. Pilots using such fields should observe local wind characteristics carefully and look for visual wind indications to use during approach and landing.

Every airport has a wind sock or a tetrahedron. These simple instruments align themselves with the wind flow and indicate *the direction from which the wind is blowing*. The pilot should know exactly where the wind sock or tetrahedron is located on his home field. At a strange field without tower facilities, he should locate the wind indicator before attempting to land. A reasonable estimate of wind speed can be made from the degree of extension of the sock, although wind socks are not uniform at all airports. When a sock is fully extended, however, winds in excess of 15-20 knots can be expected. If the wind is variable in direction, the wind sock will oscillate from side to side. If the wind is gusty, the sock will oscillate up and down. In strong, gusty winds, the end of the wind sock will flap very rapidly from side to side and up and down, warning the pilot to use every precaution in the landing.



Where there is no wind sock, wind direction can be judged by observing smoke, dust, flags or clothes on a clothesline. The degree of roughness or turbulence in the low levels is some measure of the strength of surface wind, because turbulence increases with wind speed.

The Beaufort Scale of wind equivalents can be a big help to the small plane pilot who does most of his flying from uncontrolled fields.

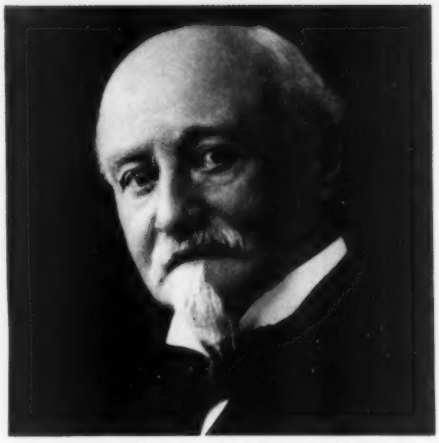
A few minutes spent in memorizing the scale could prevent a scraped wing tip or broken landing gear.

Never bet your life that the wind will stay constant in direction or speed. It usually doesn't. ■

Famous
FLYERS

Octave Chanute, The GODFATHER

Octave Chanute, the retired railroader and bridge builder, who in 1896 took up gliding in his mid 60s with aircraft of his own design. His ingenious ideas and his generous encouragement of pioneers like the Wrights hastened the achievement of powered flight.



The success of the Wright brothers in achieving controlled, powered, man-carrying flight in 1903 came after years, indeed centuries, of human struggle to master the realm of the sky. Orville and Wilbur freely acknowledged their indebtedness to many earlier designers and inventors, but if there is one man amongst all the pioneers of aviation who might have claimed with justification to have been their aeronautical godfather, it would have been Octave Chanute.

Born in Paris on February 18, 1832, the son of a university professor, Octave Chanute came to this country with his family at the age of seven. He went to work as a chainman on the Hudson River Railroad in New York City at age 17, and was promoted to division engineer by the time he was 21. Moving west with the railroads at midcentury, Chanute became an eminently successful and ingenious construction engineer who laid out many miles of track toward the Pacific. He is credited with inventing the technique of preserving wooden railroad ties by impregnating them with creosote. Other works of his fertile mind included the famed Union Stockyards in Chicago, and the elevated train system of New York City.

He left the railroad industry in 1883 to begin a new career as a bridge builder, and soon was spanning the Missouri and Mississippi River with his designs.

In 1889 Chanute retired from construction work and settled down in Chicago. His attention turned to what had been a subject of increasing interest to him over the past 15 years: the theories of European aeronautical pioneers. He was particularly interested in the theories of the Englishman Francis Wenham, who stressed the need for developing a systematic approach to flight.

Chanute proceeded to do just that. After poring over all the historical accounts he could get his hands on, both in the United States and abroad, he began to publish a series of articles on "Progress in Flying Machines" in the *Railroad and Engineering Journal* of New York. The first article appeared in 1891; the entire series was later published as a book. This was the first comprehensive and systematic review ever to appear on human flight, and it was a masterful achievement, complete with many detailed drawings as well as photographs, aerodynamic formulas, graphs, and propulsion designs, stress tables, wing-loading calculations, etc. as well as accounts of various lengthy studies on the flight of birds species. Chanute began by collecting data on the earliest mythological and legendary figures, and he concluded with a lengthy description of the work of Otto Lilienthal, currently at the height of his fame.

Although an admirer of Lilienthal, Chanute believed that a practical airplane could not be properly controlled by the pilot flinging his body about as required in the German's hang gliders, and that some form of "automatic and voluntary" stability should be designed into the aircraft—i.e., controllable airfoils were needed. His first original design, a multi-winged (5) glider, apparently permitted the pilot to move the wings horizontally around a vertical axis. The multiplane glider did not fly well, and Chanute went on to produce a biplane, probably the most successful and influential airplane ever built before the Wright glider.

The two wings were fastened together and braced by what was known as a "Pratt truss" (a bridgebuilding concept) which increased stability of the airfoil without loss of lift. This method of rigging the wings proved to be the prototype of all the biplanes later developed. Beneath the wings Chanute positioned the pilot in an open cage, with horizontal bars supporting him under his armpits and two vertical bars to grasp with his hands; there was also a small seat slung below, which few pilots apparently ever had time to use (most flights lasted only about 10 to 12 seconds). The tail was fastened to a boom extending aft behind the pilot; the boom was flexible enough to allow for some vertical movement of the tail, but there were no hinged planes.

In 1896 Chanute, then aged 64, flew this glider from the sandhills of Lake Michigan, about 30 miles west of Chicago. His choice of a flying site with the "forgiving" sand and water available for crash landings, showed excellent judgment, as well as some deference for his aging bones. According to reports, this biplane glider was so inherently stable that not only did Chanute and his co-workers fly it without accident, but they also allowed "amateurs" to take it up on occasion, when the wind was slight. They estimated it to achieve a ground speed of 17 to 20 mph, and an airspeed of about double that. They logged nearly 1,000 flights, many of them well over 100 feet in length. On very windy days they "sat around and watched the birds," and Chanute apparently learned how to make full stall landings from observing a sparrow alight on pavement.

The success of his biplane glider, as reported in the press, together with the widespread interest in his "Progress in Flying Machines", made Chanute into a public figure, much in demand as a speaker for, and correspondent to, aeronautical

and scientific societies throughout the world. He also received hundreds of letters from youngsters asking, in effect: How does one go about building an airplane?

One such letter, describing the author as "afflicted with the belief that flight is possible to man," was datemarked Dayton, Ohio, May 13, 1900. It was signed by Wilbur Wright, and it was the beginning of an extraordinary correspondence that lasted until Chanute's death in 1910. The older man quickly recognized the quality of genius in the Wright brothers, encouraged them, visited them, supported them and advised them on financial as well as theoretical and practical matters. Over the ensuing decade some 400 letters passed between the Wrights and their mentor in Chicago.

During this period Chanute gave up his own experimentation and threw himself into the task of supporting the efforts of others elsewhere in America, in England, on the European continent, and in Australia (Hargrave). Without question his efforts to bring about the free exchange of experimental results among independent workers in aviation hastened the advent of successful human flight.

Wilbur noted admiringly, "What one man can do himself directly is but little. If however he can stir up ten others to take up the task (of mastering flight) he has accomplished much. I know of no man in America so well fitted . . . to do this missionary work."

Chanute's inability to take the final step in the perfection of the glider, as perceived by the Wrights (controllable, movable planes), cost him any claim to immortality as an inventor; but it may very well be that his willingness to formulate the problem for the benefit of others made it possible for Wilbur and Orville to grasp the solution.

(From material provided by FAA's Great Lakes Public Affairs Office) ■

Chanute began with a multi-plane glider, later shifted to a biplane with a specially designed "truss" that braced the wings.

Pilot BRIEFS

■ ZINC CHROMATE PRIMER has been found peeling from the interior of the induction air box in various types of single-engine aircraft. Flakes of primer entering the air intake can restrict the carburetor venturi or injection system components and cause engine power loss. Owners of aircraft which have been corrosion-proofed in this area should examine the paint or primer finish. If peeling or flaking is found, corrective action should be taken promptly.

■ INADEQUATE OR NO PREHEAT before start-up at zero or near zero temperatures can cause engine damage or failure. In a recent incident following a cold start, moisture frozen in the scavenger pump (which is driven by the main pump) resulted in a sheared oil pump shaft. The application of heat to the cylinder area only does not assure that the entire oil system is sufficiently heated, as it should be before an attempted start-up in subfreezing weather.

■ COVERUP. The paper or plastic coverings which aircraft manufacturers place on the carpeting and upholstery are there to keep the cabin interior clean during final assembly, and are not meant to remain in place during flight. Airworthiness certificate requirements state that all crew and passenger compartment interior materials must be flash or flame resistant. When replacing any materials in the aircraft the replacements should be of equivalent quality to preclude fire hazards.

■ CALCULATOR INTERFERENCE. Pilots who allow aircraft passengers to operate pocket calculators on board are urged to double-check that there is no interference from the calculator in the low-frequency (ADF) band--usually between 200 kHz and 450 kHz. Although it has been proposed that hand-held calculators be exempt from the rule which bans the use of portable battery-operated electronic items on an aircraft, there have been reports that calculators which are operated in close proximity to the ADF loop antenna (from two to six feet) can cause some degree of interference to the radio compass. Pilots should be alert to this possibility and watch for ADF malfunctions whenever a calculator is being used on board.

■ TIPS FOR TWINS. Cross-starting engines can place a demand on the generator that is two or three times its rated capacity, and can also subject generator control circuits to overloading. Such an overload condition produces heat which can reduce the useful life of the generator brushes and overheats the armature and field, as well as the voltage regulator components. In cross-starting twins, the generator of the running engine is turned on to assist the battery to start the second engine.

DARING YOUNG MAN ON A FLYING TRAPEZE. Aerialist soaring over mountains in Southern California was competing in the first national hang-gliding competition. Hang-gliders, modern versions of early attempts to achieve birdlike flight, have soared as high as 4,000 feet in flights lasting over three hours. Winner was Chris Wills, Santa Ana, Calif.

FAA Will Use 50 kHz Channel Spacing for VORs and ILSs

Prompted by increasing requirements for new air navigational facilities which cannot be met with existing frequencies, FAA has taken the first step toward doubling channels in the VOR spectrum by reducing the present channel spacing from 100 to 50 kHz. (This policy is consistent with action previously taken by the Federal Communications Commission.) However, to minimize the impact of the new channel policy on aircraft owners, FAA will not change any existing facility channel assignment before January 1976, and then only on an as-required-basis. *New* facilities may be assigned one of the new split channels sooner than that *if* a 100 kHz channel is not available.

Affected will be VOR's, ILS localizers and simplified direction finders (SDF's). In addition, the ILS glide slope channel spacing will be reduced from 300 to 150 kHz and the Y channel added to the present X channel mode of operation for TACAN/DME.

Modifications required of non-Federal ground facilities in order to accommodate this policy are spelled out in a concurrent change to the FARs Part 171. Similar modifications required of federally operated facilities are already underway.

Noise Standards for Small Propeller Planes Proposed

Noise standards for small (under 12,500 lbs.) propeller airplanes have been proposed by FAA which will affect all new designs applying for type certification after October 10, 1973. The maximum allowable noise levels would range, depending on weight, from 68 to 82 decibels, measured on the recently established "A" scale, which closely approximates what the human ear perceives. After January 1, 1975, the maximum noise levels for new type certification would be 68 to 80 db(A) with up to five additional decibels allowed to airplanes with good climb performance, which lessens the noise impact on the ground.

For currently certificated aircraft models the proposal would freeze noise levels at their present level, with no modifications permitted which would increase those levels. Additionally, after January 1, 1980, *all aircraft* coming off production lines, would have to conform to the noise limits, regardless of the date of application for type and airworthiness certificate.

A relatively simple method for measuring the noise is proposed for this type of aircraft. Sound would be recorded at a point on the ground during four overflights 1,000 feet above the ground, at rated maximum continuous engine power and in cruise configuration.

These are the same standards that were adopted in March by the International Civil Aviation Organization (ICAO) Working Group C in an attempt to standardize noise level limits among various countries.

Deadline for comments on the proposal (Notice #73-261) is December 14, 1973. Write FAA, AGC-24, 800 Independence Ave., S.W., Washington, D.C. 20591.

Man-made Slicks May Tame Storms

A new method of smoothing the surface of the ocean by means of deliberately induced slicks holds promise that a way may be found to decrease the intensity of storms and perhaps even hurricanes. Part of the energy required to produce and perpetuate a tropical storm comes from evaporation of the water surface. The slick acts to slow this evaporation by diminishing ripples and whitecaps, leaving less water surface in contact with the air.

The man-made slicks being experimented with are composed of oleyl alcohol, an organic substance which is harmless, non-polluting, and biodegradable, and are clearly visible to the eye. They remain for several hours, and reform after being disturbed.

While cautioning that further experiments with much rougher seas will be needed before estimates can be made of the extent to which such a film might reduce a hurricane's force, scientists at NOAA's National Hurricane Research Laboratory in Miami are optimistic. In one instance they were able to reduce surface winds from 120 mph to about 26 mph by eliminating surface evaporation during tests.

UCLA Studies Mechanic Practices

Under a contract with FAA, the University of California at Los Angeles will study occupational practices of aviation mechanics and the training materials they use. The study will seek to identify changes in work activities resulting from the introduction of new equipment, procedures and techniques, the level of knowledge and skill required, the scope of training offered by industry, and text materials in use.

Purpose of the survey, which will be completed by January 31, 1974, is to update the mechanics' training curriculum to keep pace with the sophisticated systems evolving from the aviation industry's advancing technology.

FAA ALERT LIST

The following aircraft were listed at press time with the FAA Office of Air Transportation Security as stolen or missing:

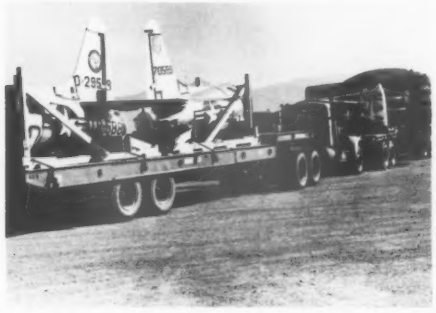
American A2A	N9798M	Poughkeepsie, N.Y.
Cessna 172	N3011U	Albany, N.Y.
Cessna 182	N2415Q	Los Angeles, Cal.
Cessna 182	N5706B	Ontario, Cal.
Cessna 210	N3884Y	Ontario, Cal.
Cessna 421	N92W	Washington, D.C.
Piper Pa-28	N6542J	Ontario, Cal.
Piper PA-32	N8919N	Washington, D.C.

If you see any of these aircraft advise the nearest FAA flight service station at once. Of course, any listed plane may since have been recovered by the owner. If your aircraft is stolen, notify the local police and flight service station.

• Aircraft Catalogs

In FAA Aviation News July 1973 Vol. 12, No. 3, you mention on p. 13 the "recycling" of surplus aircraft. Could you send me (or direct me to the proper agency that publishes) a catalogue of surplus aircraft.

W. K. Achenbach
Phila., Pa.



Advance information on upcoming sales is available from the Defense Surplus Sales Office, Dept. RK-24, P. O. Box 1370, Battle Creek, Mich. 49016. This office maintains a master list of all persons interested in bidding on surplus material, including their geographical location and particular interests, and provides them with an invitation to bid on appropriate offerings in their area. The invitation includes details on terms of sale, location of the property, description, quantity, dates of inspection, time and date of bid opening, removal of property etc.

• Channel Splitting Headaches

I've read your August article on the new plan for more channel splitting to 25 kHz spacing, and for the life of me I cannot understand the need for additional channels. In the past three weeks I've flown almost 7,000 miles through the United States and Canada and I didn't use more than 25 channels. As a matter of fact, they could have all been the same one if they were over 150 miles apart. In Canada, I only used one channel (122.2) for the entire trip without any problems.

Since reading your article I made a list of towers within 400 miles of here, including ground control, approach control and UNICOM positions, and still only came up with 76 channels being needed—many of them doubtlessly could be duplicated because of distance separation.

Are you sure you folks aren't calling "wolf"? Frankly, I think the channels should be widened, not narrowed.

Kenneth Harris
Reseda, Calif.

Without knowing the itinerary of your flight it is not possible to comment on your statement that you used only 25 channels in 7,000 miles of traveling. We would assume that the trip was VFR, and in low density traffic areas. At the higher altitudes, en route frequencies cannot be repeated for 810 miles in order to assure a reliable communications link between pilot and controller.

Before the agency decision was made to go to 25 kHz spacing a rigorous "proof of need" was necessary. Both manual and computer studies were performed to determine if air traffic control requirements could be met by other means. You may be interested in knowing that within 400 miles of your base at Reseda, Calif., 191 channels now provide service through 650 assignments. The constantly increasing number of pilots who use air/ground communications would inevitably lead to serious delays in communications unless more channels are made available. Active pilots now number about 750,000 in the United States.

You should recall that of the present 360 air/ground aviation channels only 282 can be used by FAA. The other 78 channels are used by ARINC and for flight tests, flight schools, UNICOM, Search and Rescue, or emergencies.

• "Qualified" versus "Rated."

Your article, "Who is in Command?" in the June, 1973, issue could be the basis of considerable confusion regarding what constitutes a safety pilot.

You stated that ". . . the safety pilot must be qualified in that particular aircraft. . . ." In my opinion, the word "particular" is misleading. FAR 91.21(b)(1) clearly states that ". . . an appropriately rated pilot (must occupy) the other control seat as a safety pilot." A big difference in meaning and subsequent interpretation. Don't you agree?

Lawrence L. Burian
NPA, Washington, D.C.

On strictly legal terms, yes. However, the agency encourages the practice of relying on safety pilots who are not only appropriately rated, but who are current in the airplane in which they are carrying out this important role. (Note: qualified = rated + current.) A pilot who has never flown an aircraft bigger than a Cessna 150, for example, could not realistically be expected to react promptly and correctly to an emergency situation when acting as safety pilot in a highly sophisticated aircraft. He could of course, point out the danger to the pilot in command, but there may not be time for the latter to recognize the source of danger and react. A much safer condition is having a safety pilot who is rated and current in the airplane to maneuver the aircraft away from the danger.

• Women as Pilots

Concerning the Forum letter on "Chauvinism" in your August issue, written by a female employee of FAA, how about your showing us some of the silly stunts that women as pilots pull off—as witnessed by certificated flight instructors like the undersigned.

John Williams
Canoga Park, Calif.

If you have the fortitude to supply us with the details, we will endeavor to comply—as regards either *sex.*

• Everybody Into the Seminar

I'd like to make a comment on some of the new rule changes that are in the works. I feel that FAA is going about it in the wrong way, trying to improve the safety record and make us better pilots with more rules.

The way to make us better and safer pilots is through mandatory attendance at safety seminars. I feel that pilots who have some unsafe practices that you know about probably have others that you don't know about, and no amount of continued flying or regulation will change that. But getting these pilots into your safety seminars would have some effect.

I enjoy your publication very much.

Maurine Dahlen
Kittery Point, Me.

FAA Aviation News welcomes comments from the aviation community. We will reserve this page for an exchange of views. No anonymous letters will be used, but names will be withheld on request.

• Benefits of Monitoring 121.5

I enjoyed your article, "False Alarm," in the September issue. I make a practice of monitoring 121.5 on my back-up radio, whether I'm flying VFR or IFR, just in case there might be a distress signal transmitted in my vicinity, and I'd like to see other pilots do this.

It could help you, as well as others. If something went wrong with your normal communications radio, and the controller knew you were monitoring 121.5, he could try to contact you in this way.

Gordon C. Leonard
Dalton, Ga.

• Among the Missing

In an article in the August issue ("Lake Reporting Service") you noted the fact that 22 aircraft were presumed lost in the lakes in a seven year time span. Is there a source published by the government and available to the public that lists the time and approximate location of missing aircraft cases?

Fred Marsh
Yorktown Heights, N.Y.

Yes, there is. About twice a year Part 3A of the Airman's Information Manual publishes a list of overdue and missing civil aircraft. The last list was printed in the June 7, 1973 issue, so you can look for the next one in December or January. Missing aircraft of another type (those believed stolen) are listed periodically in FAA AVIATION NEWS.

• Low and Slow

I enjoy reading your magazine and look forward to receiving it monthly. The cover picture on your August issue, however, raised a question in my mind. The plane looks very low—I hope it was in the process of landing, otherwise it might be below the minimum safe altitude.

Daniel B. Ahern
Atlanta, Ga.

The aircraft was taking off on a flight overwater, and was used in connection with the article "Lake Reporting Service" on page 8.

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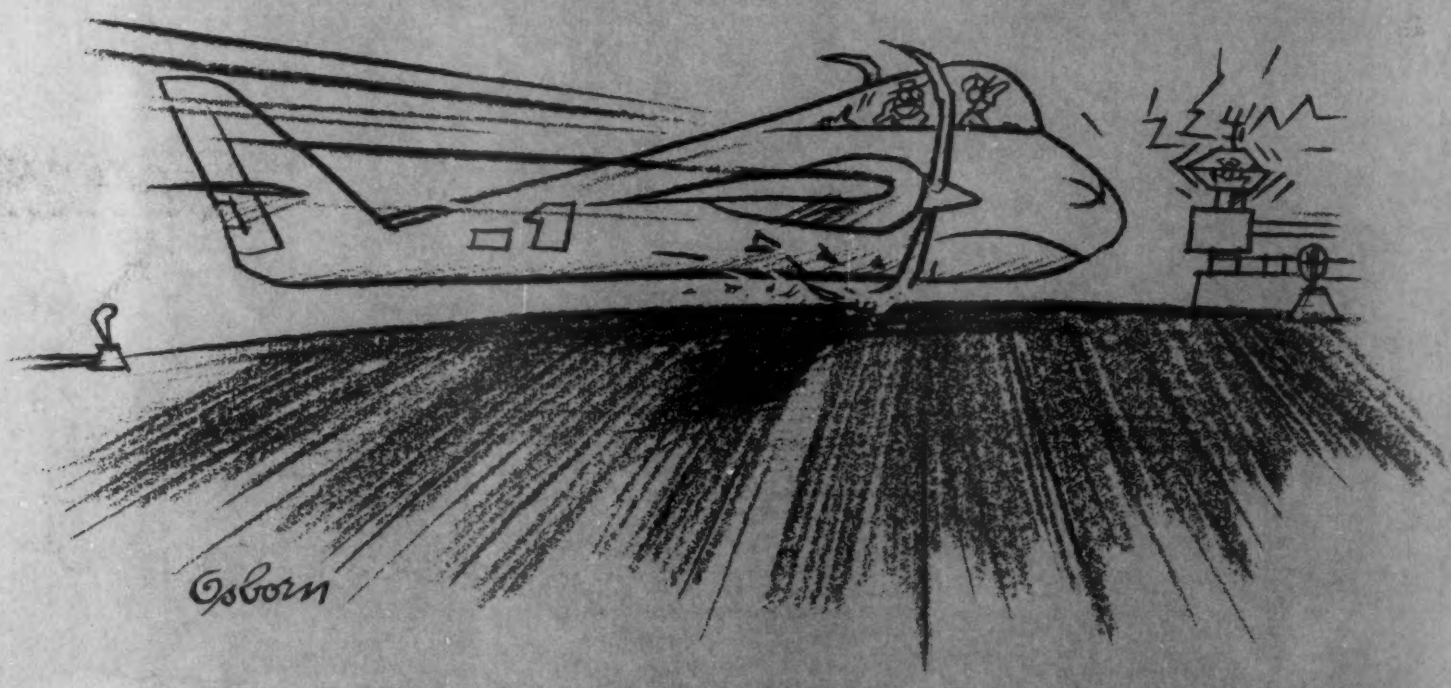
Battery low?



Gear no-go!